

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



10/528675



(43) International Publication Date
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number
WO 2004/029235 A2

- (51) International Patent Classification⁷: C12N 9/02, 15/52, 5/10
- (21) International Application Number: PCT/EP2003/010498
- (22) International Filing Date: 22 September 2003 (22.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02021650.3 27 September 2002 (27.09.2002) EP
- (71) Applicant (*for all designated States except US*): DSM IP ASSETS B.V. [NL/NL]; Het Overloon 1, NL-6411 TE Heerlen (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): HOSHINO, Tatsuo [JP/JP]; 2-18-14 Fueta, Kamakura-shi, Kanagawa-ken 248-0027 (JP). MIYAZAKI, Taro [JP/JP]; Kameino 2-14-8, Fujisawa-shi, Kanagawa-ken 252-0813 (JP). SUGISAWA, Teruhide [JP/CH]; Inzlingerstrasse 80, CH-4125 Riehen (CH).
- (74) Agent: MUELLER, Ingrid; Roche Vitamins Ltd., Patent Department (VMD), Wurmisweg 576, CH-4303 Kaiseraugst (CH).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
- without international search report and to be republished upon receipt of that report
 - with (an) indication(s) in relation to deposited biological material furnished under Rule 13bis separately from the description
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: ALDEHYDE DEHYDROGENASE GENE

(57) **Abstract:** The present invention relates to a novel DNA which encodes aldehyde dehydrogenase (SNDH), an expression vector containing the DNA and recombinant organisms containing said DNA. Furthermore, the present invention concerns a process for producing recombinant aldehyde dehydrogenase protein and a process for producing L-ascorbic acid (vitamin C) and/or 2-keto-L-gulonic acid (2-KGA) from L-sorbose by using the recombinant aldehyde dehydrogenase protein or recombinant organisms containing the expression vector. Also provided is a process for the production of 2KGA with a microorganism in which the gene encoding said aldehyde dehydrogenase is disrupted.

WO 2004/029235 A2